

Ramadhan 1440 A.H
Astronomy Activity Booklet

Salaamunalykum friends,

Its again that time of the year when we meet and decide to bring change in ourselves. This year we have decided to increase our love for the Holy Quran by focusing on different Scientific topics that we study at School. Apart from Holy Quran Ayats we have also included extracts from Tawheed Mufaddal, by Imam Jafer Sadiq (as).

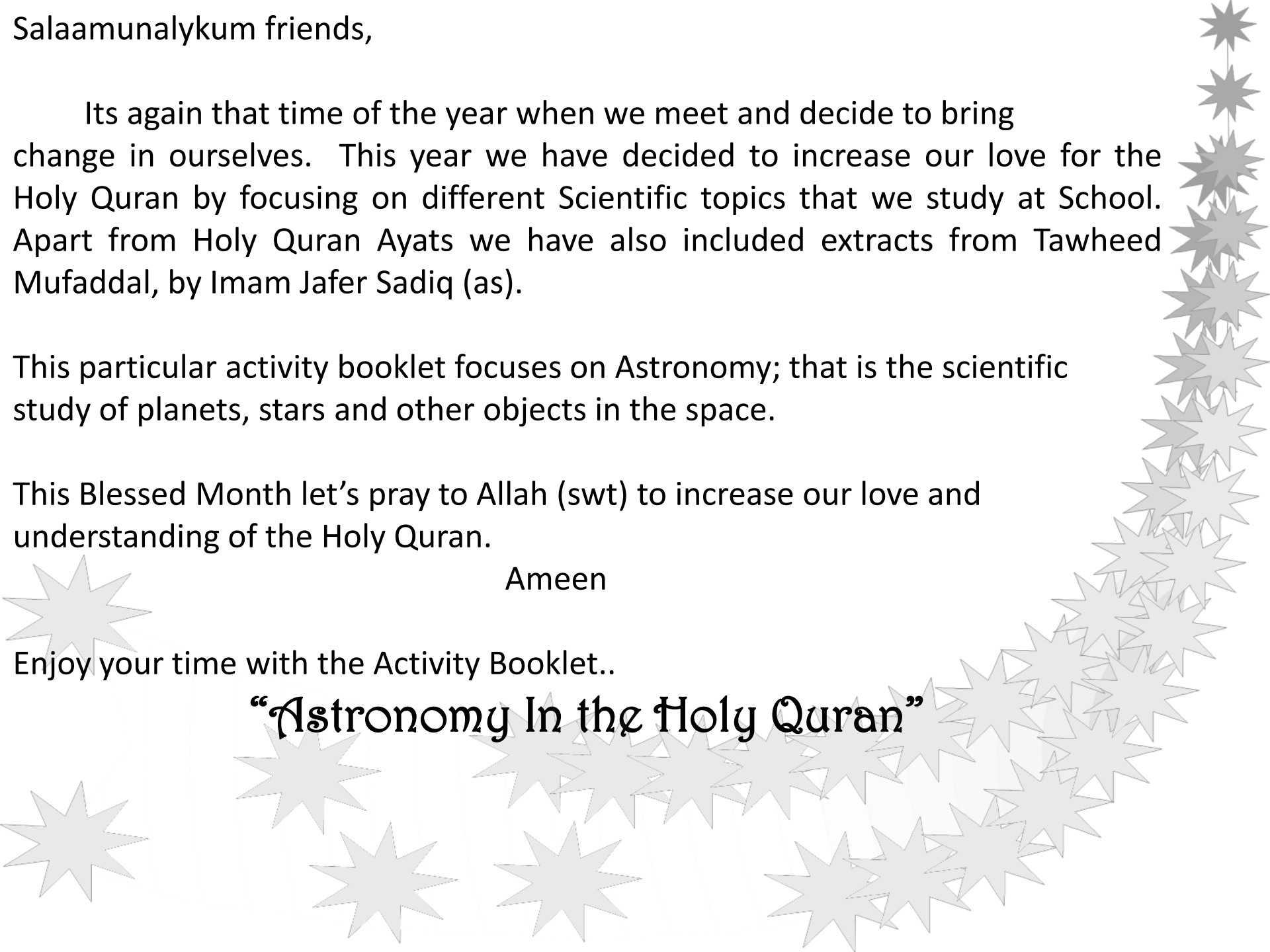
This particular activity booklet focuses on Astronomy; that is the scientific study of planets, stars and other objects in the space.

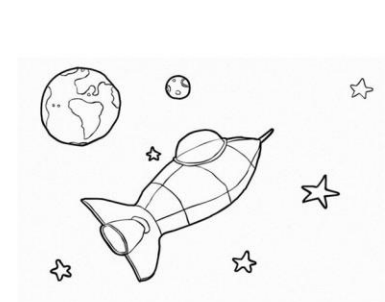
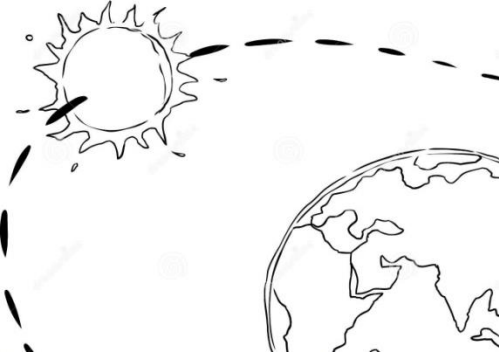
This Blessed Month let's pray to Allah (swt) to increase our love and understanding of the Holy Quran.

Ameen

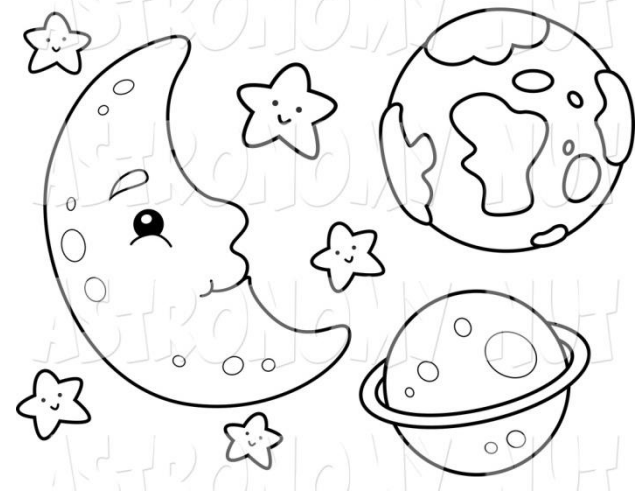

Enjoy your time with the Activity Booklet..

“Astronomy In the Holy Quran”





Astronomy in the Holy Quran



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

إِنَّ رَبَّكُمْ اللَّهُ الَّذِي خَلَقَ السَّمَاوَاتِ وَالْأَرْضَ فِي سِتَّةِ أَيَّامٍ ثُمَّ اسْتَوَىٰ عَلَى
الْعَرْشِ يُغْشِي اللَّيْلَ النَّهَارَ يَطْلُبُهُ حَثِيثًا وَالشَّمْسَ وَالْقَمَرَ وَالنُّجُومَ
مُسَخَّرَاتٍ بِأَمْرِهِ أَلَا لَهُ الْخَلْقُ وَالْأَمْرُ تَبَارَكَ اللَّهُ رَبُّ الْعَالَمِينَ

Surely your Lord is Allah, who created the heavens and the earth in six periods of time, and He is firm in power; He throws the veil of night over the day, which it pursues incessantly; and (He created) the sun and the moon and the stars, made subservient by His command; surely His is the creation and the command; blessed is Allah, the Lord of the worlds.

Surah Araf, Ayat 54

Ayat no 1

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



وَالْقَمَرَ قَدَرْنَا مَنَازِلَ حَتَّىٰ عَادَ كَالْعُرْجُونِ الْقَدِيمِ

And (as for) the moon, we have ordained for it stages till it becomes again as an old dry palm branch.

Surah Yaseen, Ayat 39

Tradition of Mufaddal

Pearls of Wisdom from Imam Ja'far Sadiq (as)

Third Session - The Environment

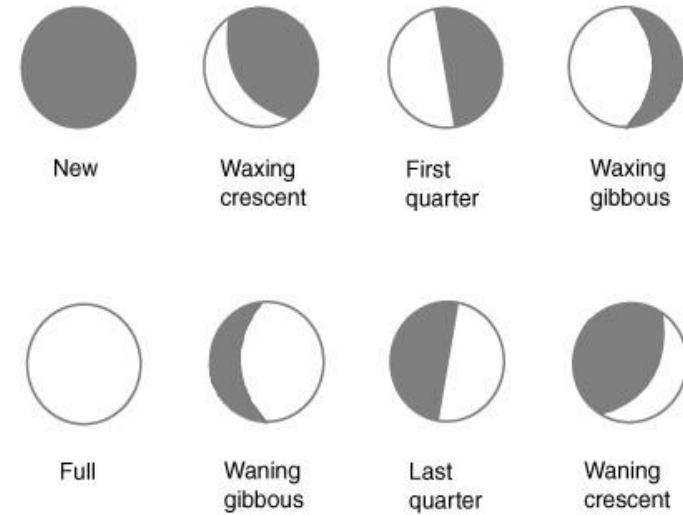
The Moon

... In the different phases of the moon, its appearance as a crescent, its disappearance during the nights at the end, its waxing and waning and its eclipses, there are particular indications that all these changes are ordained for the benefit of the universe by the Almighty Creator Allah, which can serve as instruction for any man disposed to avail such instruction...



Moon and its stages

The revolution of the Moon around the Earth makes the Moon appear as if it is changing shape in the sky. From Earth we see the Moon grow from a thin crescent to a full disk (or full moon) and then shrink back to a thin crescent again before vanishing for a few days. These phases repeat themselves about once every 29.5 days.



There are 8 total phases that the moon goes through:

- The new moon is when the moon is all dark. None of the moon that we can see is lit up during the new moon.
- A crescent moon is when the moon is between the new and quarter moon stages.
- The quarter moon (or a half moon) is when half of the moon is visible. If the moon is waxing, it is called the first quarter, if the moon is waning, it is the last quarter.
- A gibbous moon is between the quarter and full moon stages. More than half of the moon can be seen, but not all of it.
- The full moon is when the moon is all lit up. All of the moon that we can see is lit up by the Sun during the full moon.

Watch this video with an adult and Discuss the phases of Moon.

<https://www.youtube.com/watch?v=f4ZHdzl6ZWg>

This Ramadhan 1440, let's practically observe the phases of the Moon and draw how it looks each night... You'll be amazed to see the beautiful creation of Allah (swt) ...

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

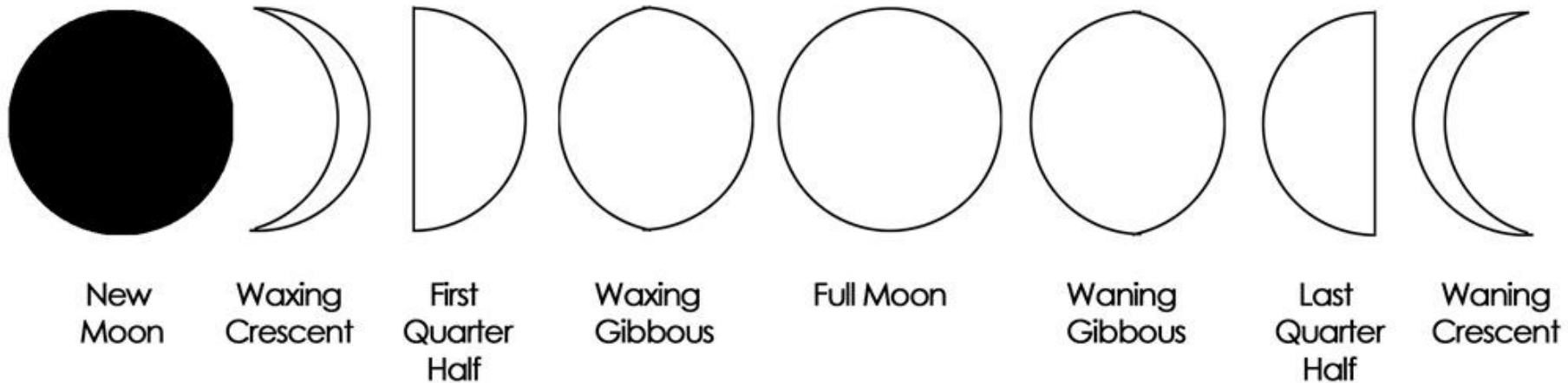
Activity Time

Ask your mum to get you some cream cookies. Scrap the cream from the cookies to display the Phases of the moon.

Let's be creative...
Design your own Moon
Using construction paper and paper plate



Design your own booklet on Phases of Moon by cutting and pasting these pictures



Let's Research



In Arabic the Word Moon means الْقَمَرَ
with the help of an adult, research the Holy Quran and find one
more ayat related to either the Moon or Phases of Moon ...

Chapter Name:

Ayat Number:

Ayat Translation:

Ayat no 2

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



تَبَارَكَ الَّذِي جَعَلَ فِي السَّمَاءِ بُرُوجًا وَجَعَلَ فِيهَا سِرَاجًا وَقَمَرًا مُنِيرًا

Blessed is He who made the constellations in the heavens and made therein a lamp and a shining moon.

Surah Furqan, Ayat 61

Tradition of Mufaddal

Pearls of Wisdom from Imam Ja'far Sadiq (as)

Third Session - The Environment

The Stars

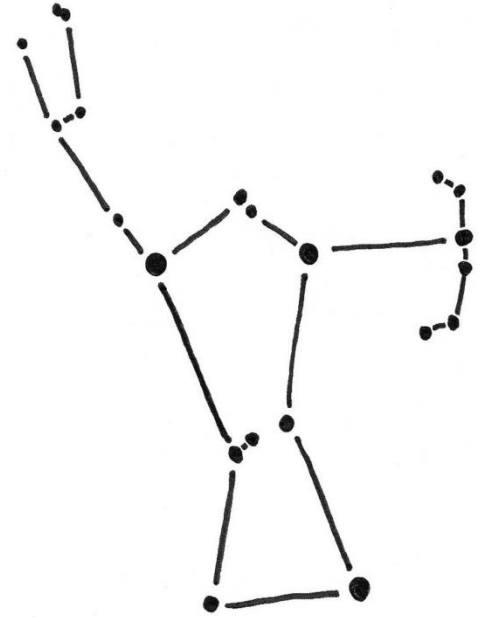
... The stars are just bright enough to give light in the absence of the moon and to enable us to move about in their glimmer. Man sometimes needs to journey at night, and in the absence of their glow, he would have found it difficult to budge on his way...



Constellations in the Night Sky

What is a constellation?

A constellation is a group of visible stars that form a pattern when viewed from Earth. The pattern they form may take the shape of an animal, a man, a woman, or any object such as a microscope, a compass, or a crown...



Read More on: <http://www.ducksters.com/science/physics/constellations.php>

Watch these videos on Constellations with an adult and discuss:

<https://www.youtube.com/watch?v=MZffhapfOgg>

<https://www.youtube.com/watch?v=1sZ15SUEs9w>

Let's do some Star Gazing



With the help of an adult observe the night sky...
Try and locate different constellations and draw
them on a sheet...

Activity Time Create your own Constellation

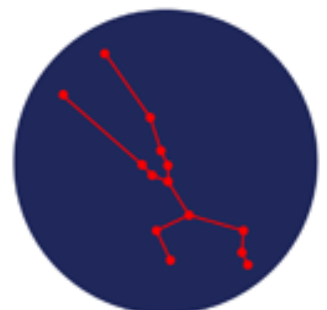
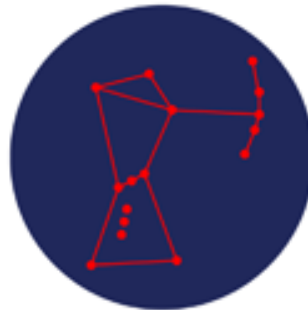
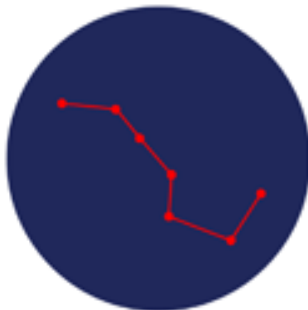
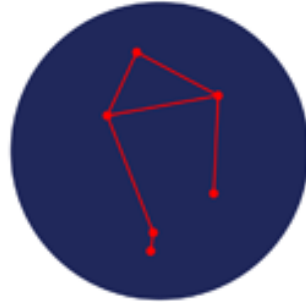
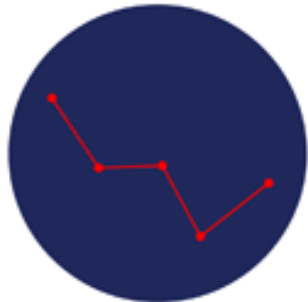
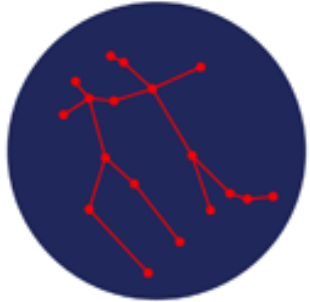
Materials needed:
Black card sheet and Golden stars

Activity:
Paste the golden stars in different directions creating
your own constellations and then give them interesting
names.



Project Time ...

1. Cut out the six constellations circles given below, or make your own.
2. Glue each cutout to the bottom of a cupcake liner.
3. Carefully punch out the red circles that indicate stars in each of the constellations.
4. Wrap the cupcake liner around the top of the flashlight and secure with string.
5. ON the flashlight in a dark room and view the constellations.



Let's Research



In Arabic the Word constellation means **النُّجُوم**
with the help of an adult, research the Holy Quran and
find one more ayat related to Constellations...

Chapter Name:

Ayat Number:

Ayat Translation:

Ayat no 3



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَجَعَلَ الْقَمَرَ فِيهِنَّ نُورًا وَجَعَلَ الشَّمْسَ سِرَاجًا

And made the moon therein a light, and made
the sun a lamp?

Surah Nuh, Ayat 16

Tradition of Mufaddal
Pearls of Wisdom from Imam Ja'far Sadiq (as)
Third Session - The Environment
The Sun

...It has, therefore, been so patterned that it rises from the East in the forenoon, shedding its light on objects opposite in the West, to move on constantly, extending its light from side to side till it goes on to the West to shed its light on objects which failed to received it in the forenoon, so as not to allow any corner to remain without the benefit and purpose, it is meant to serve...



Sun and the Moon

Sun and Moon form part of our solar system. The Sun is a star and it gives out heat and light of its own. The Sun is in the center of the solar system with planets moving round it. The light given by the Sun is responsible for life in this earth.

The planets and the Moon do not give out light of their own. They can be seen because they reflect the light from the sun.

As the Moon moves around the Earth, we see different parts of the Moon's lighted surface. This is why the moon's shape appears to change. The shape of the moon appears to change from night to night whereas the shape of the sun does not appear to change from day after day.

Moon is a satellite that is different from man-made satellite. It does not collect information unlike the man-made satellite.

The moon is not an artificial but a natural satellite of the earth.





Moon

The Natural Satellite

Moon is a Natural Satellite. It doesn't have light of its own. With the help of an adult search the difference between natural and artificial satellite.

Natural Satellite	Artificial Satellite

Sun and the Shining Lamp



Sunlight gives life and energy to life ... with the help of an adult search and find information on Advantages of Sunlight

Advantages of Sunlight

Let's Research



In Arabic the Word Sun means الشَّمْسُ
with the help of an adult, research the Holy Quran and
find one more ayat related to Sun...

Chapter Name:

Ayat Number:

Ayat Translation:

Ayat no 4



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَهُوَ الَّذِي خَلَقَ اللَّيْلَ وَالنَّهَارَ وَالشَّمْسَ وَالْقَمَرَ كُلٌّ فِي فَلَكٍ يَسْبَحُونَ

And He it is who created the night and the day
and the sun and the moon; all travel along
swiftly in their celestial spheres.

Surah Anbiya, Ayat 33

Tradition of Mufaddal
Pearls of Wisdom from Imam Ja'far Sadiq (as)
Third Session - The Environment
The Day and Night

...Just consider the relative hours of the day and night.
How they are adjusted for the benefit of creation. The
days or the nights do not exceed fifteen hours...



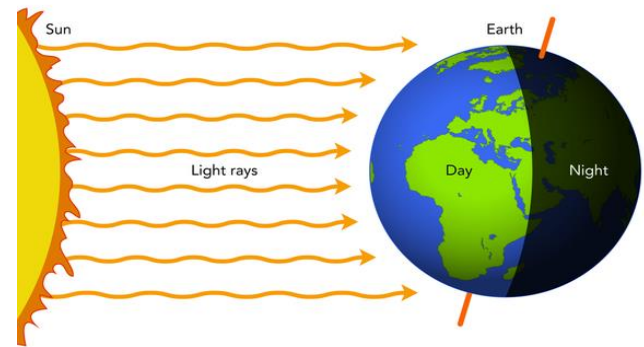
Formation of Day and Night...

We have day and nights on earth because of the Earth's rotation on its axis. Axis is an imaginary line passing through North and South poles of the earth.

When we look up in the sky during different times of the day, we see that the sun is moving from one direction to the other.

It rises in the East in the morning and sets in the west.

In reality the sun is not moving it is our earth that is rotating around the sun and this rotation causes day and night.



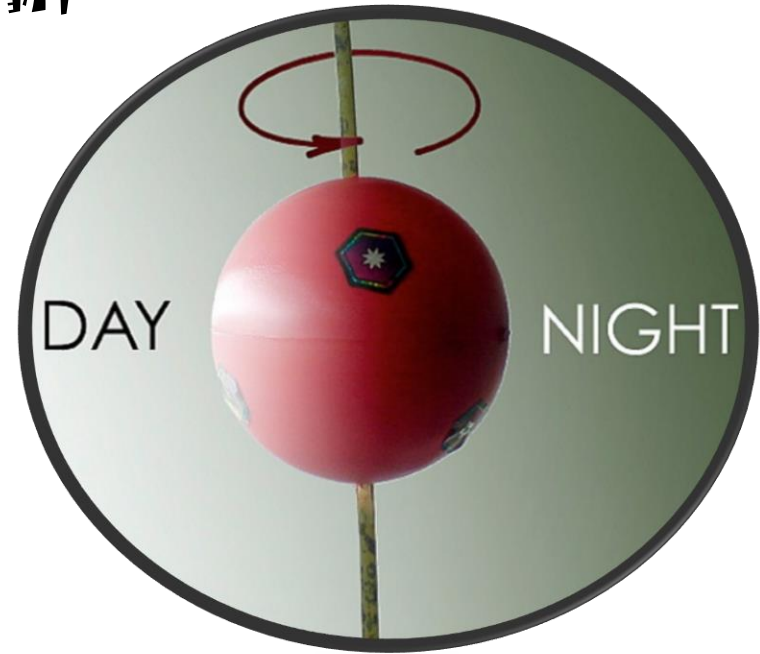
The Earth takes 24 hours to complete one rotation around its axis. Half the time i.e. for 12 hours one side of the Earth is facing the Sun, in this side there is Day whereas on the other side there is night.

Watch this video with an adult

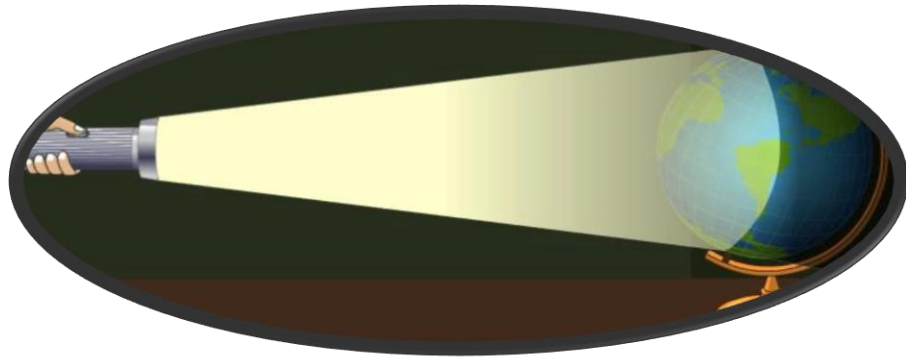
<https://www.youtube.com/watch?v=s0suiTOvg68>

Spin and form Day and Night

Pierce the ball with the stick, then hold them up and light the torch. The side of the ball in light represents the side of the Earth experiencing daytime, the side in shadow demonstrates night-time.



Let's do some Research



Use a globe, mark the continent you live in... light the torch, and make a list of at least 25 places where it is daytime...

Now turn the globe towards the place where it's darkness and make a list of 25 places where it's nighttime...

12 Hours for Our 12 Imam (as)

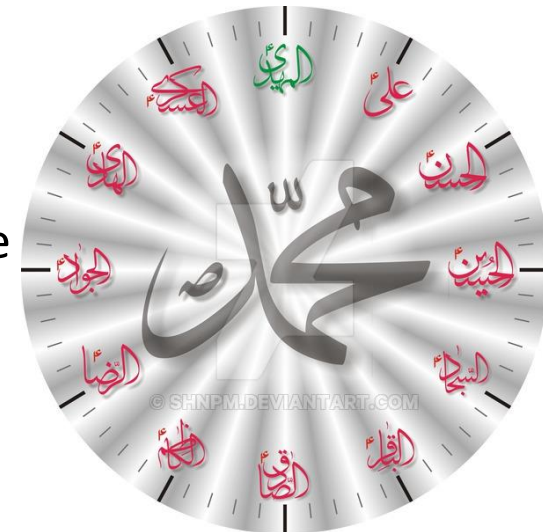
Each day has 24 hours... 12 hours of morning and 12 hours of night . Allah (swt) has also blessed us with 12 Imam (as). Each hour of the day is dedicated to each of the 12 Imam (as).

We have special Duas to recite at each hour of the day
<http://www.duas.org/pdfs/Hourlyduas3.pdf>

Activity Time

Design your own clock having names of Imam (as) instead of the numbers. You can use a paper plate or an old CD to make your Islamic Clock...

1. The Twelve Imams Clock



Let's Research



In Arabic the Word Day and Night means اللَّيْلَ وَالنَّهَارَ
with the help of an adult, research the Holy Quran and
find one more ayat related to Day and Night...

Chapter Name:

Ayat Number:

Ayat Translation:

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Ayat no 5

إِنَّ عِدَّةَ الشُّهُورِ عِنْدَ اللَّهِ اثْنَا عَشَرَ شَهْرًا فِي كِتَابِ اللَّهِ يَوْمَ خَلَقَ السَّمَاوَاتِ
وَالْأَرْضَ مِنْهَا أَرْبَعَةٌ حُرْمٌ ذَلِكَ الدِّينُ الْقَيِّمُ
فَلَا تَظْلِمُوا فِيهِنَّ أَنْفُسَكُمْ وَقَاتِلُوا الْمُشْرِكِينَ
كَأَفَّةً كَمَا يُقَاتِلُونَكُمْ كَأَفَّةً وَاعْلَمُوا أَنَّ اللَّهَ مَعَ الْمُتَّقِينَ



“Verily the number of months with Allah is twelve months in the Book of Allah, (since) the day He created the heavens and the earth, four of them are sacred. That is the established religion. So be you not unjust unto your selves during them. And fight polytheists totally even as they fight you totally, and know that Allah is with the pious ones.”

Surah Tawbah, Ayat 36



Formation of Years and Months

Lunar and Solar calendar

A **Lunar calendar** is a calendar whose date indicates the phase of the moon. A lunar month is the time the moon takes to pass through a complete cycle of its phase and is measured from New Moon to New Moon. A lunar month is about 29.5 days (29 days, 12 hours, 43 minutes, 11.6 seconds) The Lunar calendar is also called the Islamic calendar.

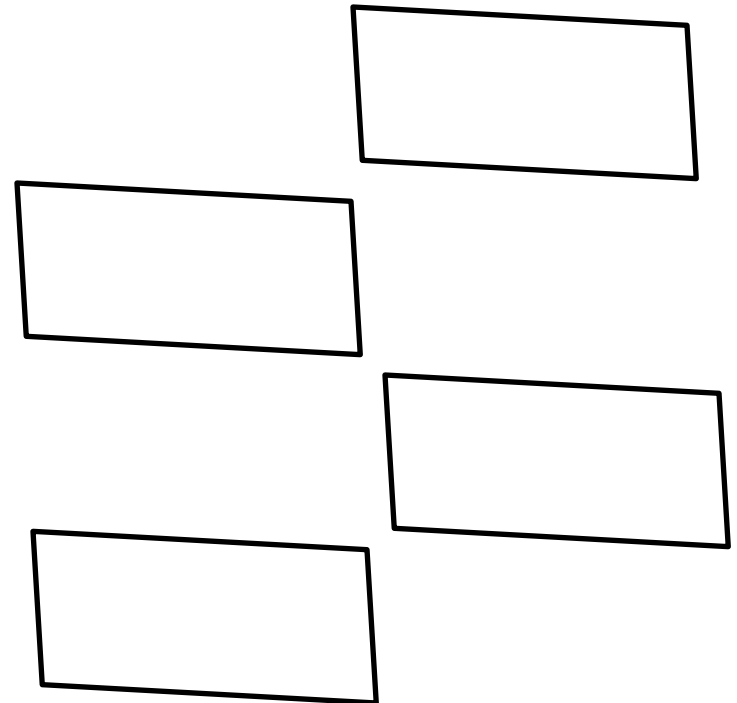
A **Solar calendar** is a calendar whose date indicates the movement of the Earth around the Sun. It takes 365 days for the completion of this movement. This movement helps form the months and the seasons. The Solar calendar is also called the Gregorian calendar

Lunar calendar

The lunar calendar is also called the Islamic Calendar. With the help of an adult list the 12 Islamic Months in order.

Activity

The verse mentions four sacred months ... with the help of an adult search the names of the 4 sacred months...



Four empty rectangular boxes arranged in a staggered pattern, intended for writing the names of the four sacred months.

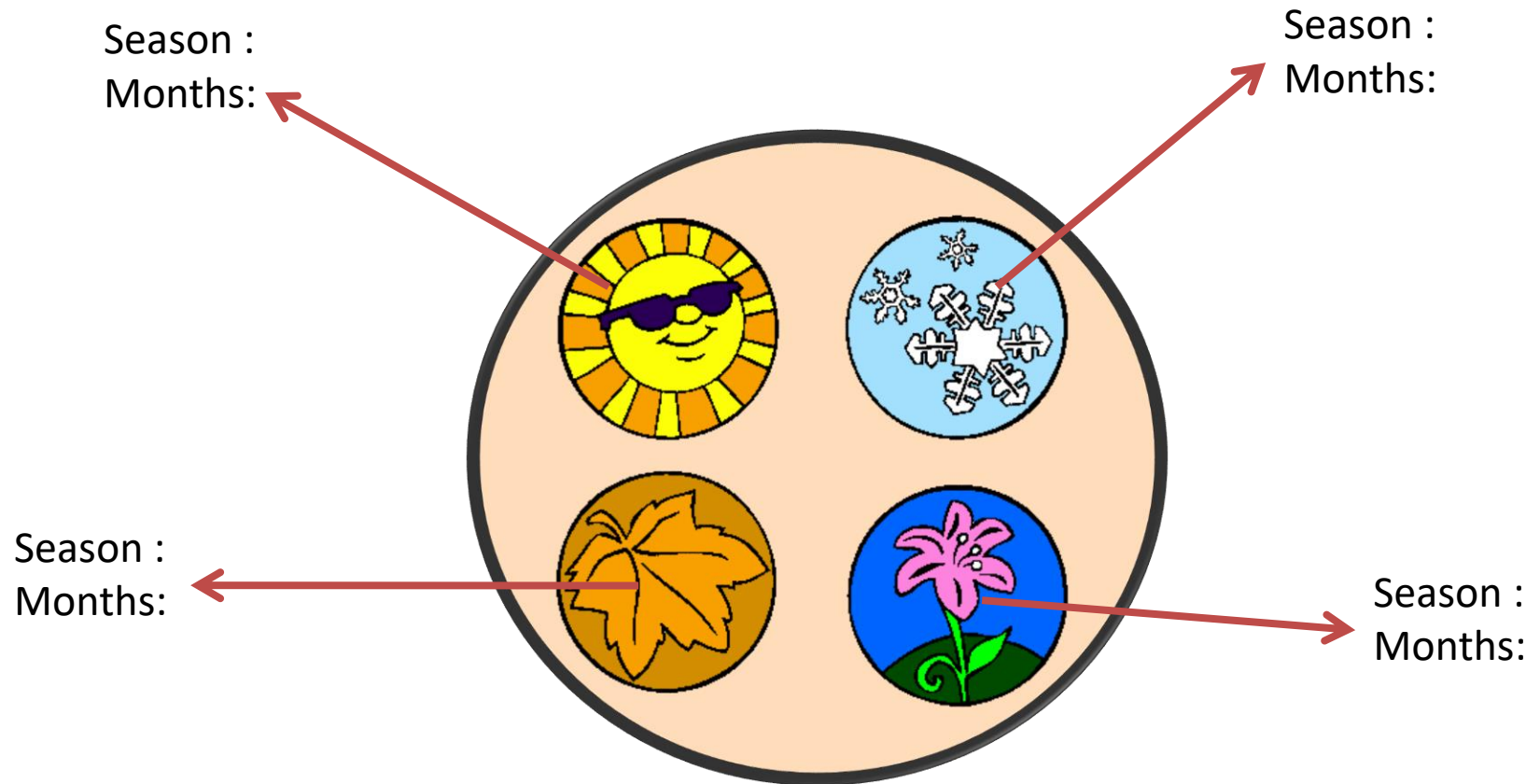
Tradition of Mufaddal
Pearls of Wisdom from Imam Ja'far Sadiq (as)
Third Session - The Environment
The Four Seasons

...Then consider the four seasons of the year,
as a result of the elevation and inclination
of the sun...



Solar calendar

The Solar calendar is also called the Gregorian Calendar. With the help of an adult discuss the names of the 12 Months and search which seasons do these Months fall in



Let's Research



In Arabic the Word 12 Months means اثْنَا عَشَرَ شَهْرًا
with the help of an adult, research the Holy Quran and
find one more ayat related to either Months or Years ...

Chapter Name:

Ayat Number:

Ayat Translation:

Inshallah, we all want to be in the army of IMAM MEHDI (ajtf)...
We want to be those who will run to his call as soon as we hear...
Imam Mehdi (ajtf) loves to see his soldiers reciting, pondering,
reflecting and acting on the verses of the Holy Quran...



Can you think of other things that we should be having in order to
be a soldier of IMAM MEHDI (AJTF)...
